APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
NGUYEN, HAI V

ART UNIT	PAPER NUMBER
2142	

24

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/311,952	Applicant(s) MURAYAMA ET AL.
	Examiner Hai V. Nguyen	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *88-104* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *88-104* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31

March 2004 has been entered.

2.   This Action is in response to the communication received on 31 March 2004.

3.   Claims 88-104 are presented for examination.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art
> are such that the subject matter as a whole would have been obvious at the time the invention was made to
> a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

5.   Claims 88-99, 104 are rejected under 35 U.S.C. 103(a) as being unpatentable

over **Crawford** patent no. **(US 5,771,354)** in view of **Attanasio** et al. patent no. **(US

5,668,943)**.

6.   As to claim 88, Crawford, Internet On-line Backup Remote Storage For

Customers Using IDs And Passwords Which Were Interactively Established When

Signing Up For Backup Services, teaches the invention substantially as claimed,

including in a computer system having a plurality of computers *(Fig. 5, items 104, 160,*

50a, 50b) connected to each other and a plurality of shared disks *(Fig. 5, virtual disks, items 64BD-64BF; 164A-164C; 136I-136K; 136(1)-136(3); 136(4)-136(6))*, each of said plurality of shared disks being coupled to one of said plurality of computers *(Fig. 5, item 64BD to computer 160; item 164A to the customer computer 50b)*, each of said plurality of computers comprising:

a processor *(Fig. 3, customer processor, item 52)* for issuing a disk request to said plurality of shared disks *(Fig. 5, items 116a, 116b; 136I-136K)* for requesting access to one of said shared disks *(one of virtual disks D:,E:, F:, I:, J:, K:)*; and

However, Crawford does not explicitly disclose a disk request processing section, separate from said processor, for processing said disk request issued to said plurality of shared disks, wherein said disk request processing section processes said disk request *to determine whether said disk request requests access to a shared disk connected to said computer or requests access to a shared disk connected to another computer and sends said disk request* to the shared disk connected to said computer if said disk request requests access to the shared disk connected to said computer, and sends said disk request to another computer to access a shared disk connected to said another computer if said request requests access to the shared disk connected to said another computer. Thus, the artisan would have been motivated to look to the related internetworking art for potential methods and apparatus for implementing for processing said disk request issued to said plurality of shared disks, wherein said disk request processing section processes said disk request *to determine whether said disk request requests access to a shared disk connected to said computer or requests access to a*

shared disk connected to another computer and sends said disk request to the shared

disk connected to said computer if said disk request requests access to the shared disk

connected to said computer, and sends said disk request to another computer to access

a shared disk connected to said another computer if said request requests access to the

shared disk connected to said another computer.

In the same field of endeavor, Attanasio discloses (e.g. accessing shared disks

on computer network), _the proxy logic stored in the memory on each of the nodes_

(Attanasio, col. 6, line 8) and applications running on any node can issue I/O requests

for any disk, as if all disks were attached locally. The logic for handling a request at the

node of origin is shown in FIG. 3. When the request is issued (block 700), the

aforementioned map, 250-K-B, is checked to determine which has the primary tail

(block 710). If the node of origin is also the server node (i.e., holds the primary tail), the

request is serviced locally (block 715). If the server node is different from the node of

origin, a request descriptor is sent to the server node (block 720). If the request is a

write request (determined in block 730), the data to be written is also sent to the server

(block 740) (Attanasio, col. 3, line 59 - col. 4, line 8). Attanasio also discloses that _each_

node of the clustered computing system is provided with proxy logic for handling

physical disk access requests from applications executing on the node and for directing

the disk access requests to an appropriate server to which the disk is physically

attached. The proxy logic on each node maintains state information for all pending

requests originating from that node (Attanasio, col. 2, lines 14-24; col. 4, lines 21-34).

Accordingly, it would have been obvious to one of ordinary skill in the internetworking art at the time the invention was made to have incorporated Crawford's teachings of accessing virtual shared disks in compute network *(see Crawford, Abstract, Figs. 5; col. 22 line 51 - col. 23, line 67)* with the teachings of Attanasio, for the purpose of enabling high availability and achieving load balancing between the remaining tails *(Attanasio, col. 2, lines 1-3; col. 4, lines 40-52)*.

7.   As to claim 89, Crawford-Attanasio discloses wherein said disk request processing section further comprises: a memory *(Crawford, Fig. 3, item 66; Attanasio, Fig. 1, item 200-1)* for storing structural definition information which describes a structure of said computer system *(Crawford, Figs. 16A-16C)*; and a disk request judging section for judging which shared disk is requested by said disk request according to said structural definition information *(Crawford, Fig. 7, item 314)*.

8.   As to claim 90, Crawford-Attanasio discloses wherein said disk request processing section further comprises: a disk request acceptance section for checking whether the sender of said disk request has access right to a shared disk to which access is requested according to said structure definition information, wherein said structure definition information includes a password to allow access to said disk to which access is requested *(Crawford, Fig. 13, item 520; Fig, 16A, item 602)*.

9.   As to claim 91, Crawford-Attanasio discloses wherein said structural definition information includes information indicating a correspondence between each of said plurality of shared disks and a plurality of identifiers *(Crawford, Fig. 5, item 64BD in*

computer 160 correspondent to item 164A in computer 50b; Attanasio, Fig. 7, item 250-

K-B).

10.   As to claim 92, Crawford-Attanasio discloses wherein said disk request

processing section comprises:

a remote processing disk request section for issuing a remote disk request to

said another computer to access said shared disk connected to said another computer

(Crawford, Fig. 5, 6E, remote disk access program; col. 18, line 1 – col. 20, line 65).

11.   Claims 93-94, 98-99 have similar limitations as claims 88-89, 91-92; therefore,

they are rejected under the same rationale.

12.   As to claim 96, Crawford-Attanasio discloses wherein said disk request

processing section comprises:

a memory *(Crawford, Fig. 3, item 66; Attanasio, Fig. 1, item 200-1)* for storing

structural definition information which describes a structure of said computer system

including connections between said computers and said shared disks *(Crawford, Figs.*

16A-16C; Attanasio, Fig. 7, items 250-K-B; col. 4, lines 15-21); and

a disk request judging section for judging whether a disk request requests access

to a shared disk connected to said computer or requests access to a shared disk

connected to another computer according to said structural definition information

(Attanasio, Fig. 3; col. 3, line 59 - col. 4, line 8).

13.   Claims 95, 97 have similar limitations as claim 90; therefore, they are rejected

under the same rationale.

14.   As to claim 104, Crawford-Attanasio discloses wherein said disk request

processing section comprises:

a memory *(Crawford, Fig. 3, item 66; Attanasio, Fig. 1, item 200-1)* for storing

structural definition information which describes a structure of said computer system

including connections between said computers and said shared disks *(Crawford, Figs.*

16A-16C; col. 39; Attanasio, Fig. 7, items 250-K-B; col. 4, lines 15-21; col. 6, lines 8-32);

a request controller for receiving a processing request from the processor for a

disk which one of said shared disks *(The proxy logic is embodied as a software layer*

that enables processors to access I/O devices physically attached to the remote

processors by defining virtual devices, intercepting I/O requests to those devices, and

routing the requests (and data, for writes) to the appropriate server processor, to which

the real device is physically attached, Attanasio, Fig. 7, item 250-K-A, proxy logic, item

250-K-C; col. 2, lines 28-39; col. 4, lines 21-34; col. 6, lines 8-32); and

a disk request judging section for judging whether a disk request requests access

to a shared disk connected to said computer or requests access to a shared disk

connected to another computer according to said structural definition information

(Attanasio, Fig. 3; col. 3, line 59 - col. 4, line 20; col. 4, lines 21-34; col. 6, lines 8-32).

15.   Claim 100 is corresponding computer program claim of claim 88; therefore, it is

rejected under the same rationale as in claim 88.

16.   Claims 101-103 are substantially the same as claims 89, 91-92 and are thus

rejected for the reason similar to those in rejection claims 89, 91-92.

Claim Rejections - 35 USC § 102

17.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e)

that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the
> United States before the invention thereof by the applicant for patent, or on an international application
> by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
> title before the invention thereof by the applicant for patent.

18.   Claims 88-104 are rejected under 35 U.S.C. 102(e) as being anticipated by

Attanasio et al. US patent no. **5,668,943**.

19.   As to independent claims 88, 96, 100, and 104 (e.g., exemplary independent

claim 88) Attanasio discloses in a computer system having a plurality of computers

connected to each other and a plurality of shared disks, each of said plurality of shared

disks being coupled to one of said plurality of computers, each of said plurality of

computers comprising:

        a processor *(Fig. 1, item 150-1 or 150-N)* for issuing a disk request to said

plurality of shared disks *(Fig. 1, items 400-1-1-1 or 400-N-1-1)* for requesting access to

one of said shared disks *(Attanasio, col. 3, line 64 – col. 4, line 21)*; and

        a disk request processing section, separate from said processor *(Attanasio,*

proxy logic stored in the memory on each of the nodes), for processing said disk

request issued to said plurality of shared disks, wherein said disk request processing

section processes said disk request to determine whether said disk request requests

access to a shared disk connected to said computer or requests access to a shared

disk connected to another computer and sends said disk request to the shared disk

connected to said computer if said disk request requests access to the shared disk

connected to said computer, and sends said disk request to another computer to access

a shared disk connected to said another computer if said request requests access to the

shared disk connected to said another computer *(Attanasio, Fig. 3; col. 2, lines 14-38;*

col. 3, line 57 – col. 4, line 21; col. 4, lines 21-34).

20.   With regards to dependent claims 89-95, 97-99 and 101-103, the limitations of

these claims are taught within the figures and disclosure of Attanasio.

Response to Arguments

21.   Applicant's arguments receive on 31 March 2004 and 05 January 2004 (paper #

18, page 5,paragraph 2) have been fully considered but they are not deemed to be

persuasive.

22.   In the remark, Applicant argued in substance that:

Point (A), the prior art does not disclose "the disk processing section is separate

from the processor" in claims 88, 96, 104.

As to point (A), Attanasio discloses that the proxy logic (Attanasio, Fig. 1, item

250-1 or 250-N; Fig. 7, item 250-K) stored in the memory (Attanasio, Fig. 1, item

200-1 or 200-N) on each of the nodes (Attanasio, col. 6, line 8) is separate from

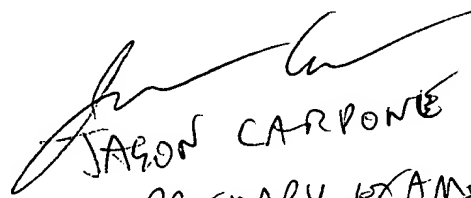the processor (Fig. 1, item 150-1 or 150-N).

23.   Further references of interest are cited on Form PTO-892, which is an

attachment to this action.

24.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hai V. Nguyen whose telephone number is 703-306-

0276. The examiner can normally be reached on 6:00-3:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jack Harvey can be reached on 703-305-9705. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Hai V. Nguyen
Examiner
Art Unit 2142

JASON CARPONE
PRIMARY EXAMINER
AU: 2142